

USSR

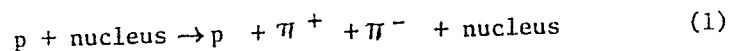
UDC 539.12

AZIMOV, S. A., Academician of the Academy of Sciences Uzbek SSR, GULYAMOV, U. G.,
CHERNOVA, L. P., and CHERNOV, G. M., Institute of Nuclear Physics of the Academy
of Sciences Uzbek SSR, Settlement of Ulugbek of Tashkent Oblast

"On the Reaction Mechanism for the Diffraction Generation of Pions by 20 Gev
Protons"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1241-1243

Abstract: Diffraction dissociation reactions



of protons with momentum 20.8 Gev/c on nuclei of a photographic emulsion exposed
to a strong magnetic field ($H = 180$ koersted) are investigated. These reactions
are of a type that have been studied in recent years and involve the interaction
of high-energy particles with nuclei (coherent interactions) in which the target
nucleus participates in the reaction as an entity, receiving only a small momen-
tum and remaining in the ground state or undergoing a small collective excita-
tion. Of reactions found in an effective length of 2.32 km of track, 404 stars
were selected with three and four charged particles satisfying the necessary
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AZIMOV, S. A., et al, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1241-1243

criteria for the selection of NN-interactions. The kinematic characteristics were measured and the particles were identified for the great majority of secondary tracks. The momenta were measured with an accuracy of 10-15%. 62 stars with p^- , π^+ , and π^- particles in the final state were selected to distinguish the reactions (1). Of these, no signs of excitation of the nuclei were observed in 47 events (group 1). Also selected were 27 stars of the type $pp\pi^+\pi^-$, the total energy of the secondary particles in which was equal to the energy of the primary particles within the limits of the error. Reactions (1) are considered to be present among the events of group 1, and the remaining events (group 2) are considered as phonon. The distribution of longitudinal and transverse momenta for events of the first and second groups is plotted. Analysis shows the prominent participation of light nuclei of the emulsion in reactions (1) at this energy. Also noted is the similarity in the dynamics of pion and proton dissociation in the field of the nuclei at energies of approximately 20 Gev.

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Parasitology

USSR

UDC 595.421

MEL'CHAKOVA, YE. D., and CHERNOVA, N. A., Institute of Zoology, Academy of Sciences, Kazakh SSR, and Mangyshlak Anti plague Station

"Ornithodoros Ticks of Mangyshlak Peninsula"

Leningrad, Parazitologiya, No 1, 1970, pp 63-65

Abstract: During field expeditions in 1964-1968 on Mangyshlak Peninsula (eastern shore of the Caspian in the Kazakh SSR), great many Ornithodoros tartakovskyi ticks were trapped, a rare find in this region. O. tartakovskyi are found most often in the burrows of rodents and turtles, in caves, and rock crevices. Great gerbils are the main hosts of O. tartakovskyi. The species Ornithodoros coniceps was also found it is previously unknown on Mangyshlak, but is common elsewhere in Kazakhstan. A total of 28 females, 20 males, 17 nymphs and 1 larva were sifted from dust collected in caves occupied by pigeons and a variety of small birds.

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1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CALLICREIN OF THE URINE AND SOME INDICES OF RENAL FUNCTION -U-

AUTHOR--(04)-NEKRASOVA, A.A., CHERNOVA, N.A., SHARAPOV, U.B., KOVALEVA,
N.T.

COUNTRY OF INFO--USSR

SOURCE--UROLOGIYA I NEFROLOGIYA, 1970, NR 3, PP 12-16

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--KIDNEY FUNCTION, BLOOD CIRCULATION, PANCREAS, HORMONE,
ESTERASE, HYPERTENSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/2056

STEP NO--UR/0606/70/000/003/0012/0016

CIRC ACCESSION NO--AP0120699

UNCLASSIFIED

2/2 017
CIRC ACCESSION NO--AP0120699

UNCLASSIFIED

PROCESSING DATE--23OCT7

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE 24 HOUR EXCRETION OF CALLICREIN WITH THE URINE OF 33 HEALTHY PERSONS AND 68 PATIENTS SUFFERING FROM VARIOUS CIRCULATORY DISTURBANCES OF THE KIDNEYS. CALLICREIN WAS ASSESSED BY DETERMINATION OF ITS ESTERASE ACTIVITY. THERE WAS FOUND A DIRECT RELATIONSHIP BETWEEN THE URINARY EXCRETION OF CALLICREIN AND THE EFFECTIVE RENAL BLOOD FLOW. CALLICREIN EXCRETION DOES NOT DEPEND ON THE FILTRATION REABSORPTION FUNCTION. EXCRETION OF CALLICREIN BY THE KIDNEYS WAS REDUCED IN CASES WITH CONSIDERABLE CHANGE OF THE RENOGRAM. IN RENOVASCULAR HYPERTENSION URINARY EXCRETION OF CALLICREIN FELL IN CASES OF BILATERAL STENOSIS OF THE RENAL ARTERIES WITHOUT ADEQUATE DEVELOPMENT OF COLLATERAL CIRCULATION AND ALSO IN UNILATERAL STENOSIS, BUT WITH DISTURBED FUNCTION OF CONTRALATERAL KIDNEY. IT WAS FOUND IN EXPERIMENT ON 20 RABBITS WITH RENOVASCULAR HYPERTENSION THAT ISCHEMIC KIDNEY CONSIDERABLY REDUCED THE SECRETION OF CALLICREIN, WHEREAS THE INTACT KIDNEY INCREASED ITS EXCRETION COMPENSATORILY. FACILITY: INST. KARDIOLOGII IM. A. L. MYASNIKOVA AMN SSSR, MOSCOW.

DECLASSIFIED

USSR

UDC 621.371:551.510.535

ZEVAKINA, R. A., KISELEVA, M. V., PUSHKOVA, G. N., ~~CHERNOVA, V. A.~~

"Effect of Ionospheric and Magnetic Disturbances on Shortwave Radio Communications"

V sb. Ionosfer. vozmushcheniya i ikh vliyaniye na radiosvyaz' (Ionospheric Disturbances and Their Effect on Radio Communications -- collection of works), Moscow. Nauka Press, 1971, pp 182-192 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1A335)

Translation: A study was made of the variation of the signal intensity as a function of disturbances of the F2 region and magnetic activity according to the data from recording the Moscow transmitter in Murmansk, Magadan and Irkutsk. The transmitter operated round the clock on directional antennas on 10 fixed frequencies from 1.5 to 24 megahertz. It was demonstrated that under quiet and disturbed conditions, the highest signal intensities are observed on frequencies 10-30 percent below the maximum usable frequency. During the disturbances, the signal intensity at all stations drops most significantly when the ionospheric and magnetic disturbances are observed simultaneously. In the case of a significant drop of f_oF2 accompanied by high magnetic activity, communications are interrupted. There are 4 illustrations and 1 table.

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UDC 621.371.029.4 2

LIKHTER, Ya. I., MOLCHANOV, O. A., CHMYREV, V. M., RAPOPORT, V. O.,
TRAKHTENGERTS, V. Yu., and CHERNOVITSKIY, V. A.

"Propagation of Signals of a Very Low Frequency Transmitter in the
Outer Ionosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
Sekts. 3 (Tenth All-Union Conference on the Propagation of Radio
Waves; Report Theses; Section 3--collection of works) "Nauka," 1972
pp 134-136 (from RZh--Radiotekhnika, No 10, 1972, Abstract No
10A374)

Translation: Results are given of experiments investigating the
propagation of very low frequency signals in the outer ionosphere.
The signals of a transmitter radiating pulses of 400 and 800 msec
at a frequency of 15 kHz with a repetition period of three seconds
were used. Reception was made at a point magnetically adjacent to
the transmitter, using two ship stations, one of which could have
left the point for a distance of 3000 km. N. S.

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1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MATERIALS BASED ON POLYVINYL CHLORIDE FOR PACKAGING FOODS -U-
AUTHOR--(03)-CHANTSEVA, A.S., CHERNOVSKAYA, R.P., OVCHINNIKOV, YU.V.
COUNTRY OF INFO--USSR
SOURCE--PLAST. MASSY 1970, (6), 62-4
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, BIOLOGICAL
AND MEDICAL SCIENCES
TOPIC TAGS--PACKAGING MATERIAL, FOOD CONTAINER, POLYVINYL CHLORIDE,
PLASTICIZER, CHEMICAL STABILIZER, ACRYLATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0709 STEP NO--UR/0191/70/000/006/0062/0064

CIRC ACCESSION NO--AP0136148
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136148

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMULATIONS WERE DEVELOPED FOR THE MANUF. OF SMALL FOOD CONTAINERS. THE MOST ACCEPTABLE MECH., ESTHETIC, AND ORGANOLEPTIC PROPERTIES WERE OBTAINED WITH POLY(VINYL CHLORIDE) CONTG. LESS THAN OR EQUAL TO 3 PARTS DIOCTYL PHTHALATE-100 PARTS COMPN. AS THE PLASTICIZER AND A STABILIZING MIXT. OF CA STEARATE, ZN STEARATE, EPOXIDIZED SOYBEAN OIL, THIOALKOFEN BP, AND POLYGARD. THE ADDN. OF SMALL AMTS. OF VINYL CHLORIDE, 2-ETHYLHEXYL ACRYLATE COPOLYMER INCREASED THE IMPACT STRENGTH OF THE COMPN.

UNCLASSIFIED

USSR

UDC 531.38:62.503.3

MADATOV, G. L., and CHERNOVSKAYA, S. S., Dnepropetrovsk Department of the
Institute of Mechanics, Academy of Sciences, Ukrainian SSR

"Analysis of the Disturbed Motion of a Solid, With Cavities Partially Filled by
a Liquid"

Kiev, Prikladnaya Mekhanika, Vol 9, No 9, pp 112-117

Abstract: The disturbed motion of a solid, with cavities partially filled by
a liquid, is represented in the form of the sum of rapid motion and slow motion.
An approximate solution of the equations of rapid motion is obtained in the form
of a function of the slow motion. Analytical expressions are presented for
determining the roots of the characteristic equation of the closed system and
the amplitude of oscillator-determined oscillations. 2 figures. 1 table. 3
references.

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USSR

CHERNOVSKIY, K., Deputy Minister of Health, Tadzhik SSR

"A Few More Words About El Tor"

Dushanbe, Kommunist Tadzhikistana, 30 jul 71, p 4

Abstract: Survival time of the cholera vibrio in the external environment depends on many factors, including temperature and humidity. Of all the vibrio strains, El Tor is most resistant to external factors. It survives 2-5 days in food products kept at room temperature; 1-7 days on fresh vegetables; 1-3 days on fresh fruits; 1 day in beverages such as beer and carbonated drinks; 7-14 days in milk, ice cream, and butter; and 7-13 days in water taken from reservoirs (irrigation ditches and channels). On articles used everyday such as currency, paper, cotton and silk garments, and leather, it survives 3 to 7 days. The vibrios are easily killed through boiling or addition of chlorinated lime or other disinfectants; they cannot tolerate an acid medium. Contraction of the disease can readily be prevented through observance of personal hygiene, proper storage and handling of food industry, trade, and private household, and sanitation of the surroundings, especially water and soil. Once the disease is contracted, it need not be fatal. The individual must not attempt to cure himself with an indiscriminate intake of 1/2

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CHERNOVSKIY, K., Kommunist Tadzhikistana, 30 Jul 71, p 4

antibiotics. He must be hospitalized immediately to receive specific, effective medical treatment.

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UDC 666.972.7.035.55:539.374

YASHIN, A. V., and CHERNOYAROVA, T. G. (Scientific Research Institute of Concrete and Reinforced Concrete)

"Influence of Steam Curing on the Creep of Heavy Concretes"

Moscow, Beton i Zhelezobeton, No 12, Dec 73, pp 11-13

Abstract: Consideration is given to the results of comparative experiments on the influence of steam curing upon the creep and the elastic properties of heavy concrete. Possible ways are indicated for a better method of determining the creep deformations of concrete during changing load regimes.

It is recommended that the initial modulus of elasticity and the value of the creep deformations of steam-cured concrete be decreased by about 20-30% in comparison to naturally hardening concretes. Irreversible creep deformations of the I kind, connected only with the action of a prolonged load, comprise, at low stress levels, 25-30%, and at high stress levels comprise 50-55% of the total value of the creep deformations of a concrete that hardens naturally and is subjected to moist-heat treatment. Failure to take these deformations into account can, in a number of cases, bring about substantial errors. The recommended refined variant of the theory of concrete creep eliminates errors

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YASHIN, A. V., and CHERNOYAROVA, T. G., Beton i Zhelezobeton, No 12, Dec 73,
pp 11-13

originating in the application of the principle of the imposition of actions in
the traditional manner. 3 figures. 5 references.

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LEVIN, V. M., CHERNOZATONSKIY, L. A.

"Sound Instabilities in Semiconductors in a High-Frequency Electric Field"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 4, 1973, pp 1243-1245

Abstract: A study was made of the parametric sound effects in a semiconductor in an AC field with a high-frequency component: $E(t) = E_0 + E_1 \cos \Omega t$ for $\Omega \sim \omega_\alpha \gg v_\alpha / \bar{l}$, where $\omega_\alpha = qv_\alpha$ is the sound frequency, $\bar{l} = v_T / \nu$, v_T and ν are the thermal velocity and the collision frequency of the current carriers. Here, the free path length \bar{l} is greater than the sonic wavelength ($q\bar{l} \gg 1$), and the formation of the forced electron density wave takes place as a result of movement of individual electrons in a nonuniform electric field $E(r, t)$ accompanying the sound vibration. The plasma subsystem is described on the basis of the kinetic Boltzman equation for the carrier distribution function. The carrier dispersion is considered by the collision integral in the τ -approximation [H. N. Spector, Phys. Rev., No 165, 562, 1968]. The effects arising are analyzed for a semiconductor with a piezobond. The calculations can be generalized to the case of the electron-phonon interaction in terms of the deformation potential.

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--HYDROFINING OF OIL FRACTIONS, MEANS FOR IMPROVING THE QUALITY OF
LUBRICATING OILS -U-
AUTHOR--(04)-BEKAYEV, R.B., ROGOV, S.P., CHERNOZHUKOV, N.I., AGAFONOV, A.V.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (4), 24-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ZEOLITE, LUBRICATING OIL, PETROLEUM REFINING PROCESS,
HYDROREFINING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRACTION--3005/1939 STEP NO--UR/0318/70/000/004/0024/0026
CIRC ACCESSION NO--AP0133783
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133783

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROFINED DISTILLATES, AFTER
PHENOL REFINING, GAVE OILS WITH LOWER S CONTENT AND HIGHER VISCOSITY
INDEX (94-7), YIELDING 1.1-4.4PERCENT ADDNL. REFINED OILS WITH HIGHER
CONTENTS OF PARAFFINIC NAPHTHENIC HYDROCARBONS AND LESS HEAVY AROMATICS
AND RESINS THAN THOSE OBTAINED WITHOUT HYDROFINING. DISTILLATES
HYDROFINED ON NI-MO-ZEOLITE YIELDED REFINED OILS WITH HIGHER VISCOSITY
INDEXES THAN THOSE HYDROFINED ON NI-MO-AL SUB2 G SUB3. FACILITY:
MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AP0054029

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

UR0065

102334r Principles of n-alkane distribution in Ukrainian petroleum. Shevchenko, E. F.; Chernozhukov, N. I. (USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(2), 9-13 (Russ). Ukrainian petroleum was grouped with respect to n-alkane content in the gasoline, diesel, and oil fractions into three classes. In the first group from the northwestern part of the Dnieper-Donets basin, n-alkane content was 30, 10-20, and 5-15%, in the second group from the area adjacent to the southern zone of this region, 20-5, 30-5, and 15-30%, in the third group from the Carpathian depression and from the Oktyabr'skoe deposit in the Black Sea region, 10-15, 15-30, and 25-30%. Content of individual C_{4-33} and C_{4-12} alkanes isolated from dearomatized fractions of the paraffinic petroleum and identified by gas-liquid chromatog. varied from 0.02 to 1.89% (C_4 and C_{11-24} hydrocarbon content <1.0% and C_{25} hydrocarbon content <0.3%). In the gasoline fractions of the resp. groups, the iso/n ratio for the alkanes was 0.4-0.8, 1.1-2.2, and 2.2-3.2, and the C_6/C_5 ratio for the cycloalkanes was 0.6-0.9, 3-18, and 1.0. With increasing b.p. and mol. wt., alkane content in the diesel fractions decreased in the first group, remained almost const. in the second, and increased in the third, whereas naphthene content varied in the reverse direction and aromatic hydrocarbon content increased steadily.

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For the oil fractions in the transition from the first to the third group, naphthenic hydrocarbon content fell, the C_6 fraction in the cycloalkanes rose from 40 to 60%, and paraffin content rose from 2 to 8%. In the resp. groups, hydrocarbon gas content was 4-5, 10-20, and 12-15%, and the C_{12} hydrocarbon/ CH_4 ratio for the gas was ≥ 1 , 0.2-0.5, and 0.1-0.15. Lucile S. Davison

pc

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19831124

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF THE COMPOSITION OF THE DISPERSION MEDIUM ON THE
PROPERTIES OF LUBRICANTS THICKENED WITH LITHIUM SOAPS OF SYNTHETIC FATTY
AUTHOR--(03)-GUSAROVA, M.S., VAYNSHTOK, V.V., CHERNOZHUKOV, N.T.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 43
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--FATTY ACID, GREASE, CHEMICAL COMPOSITION, ORGANOLITHIUM
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1513 STEP NO--UR/0318/70/000/002/0043/0043
CIRC ACCESSION NO--AP0118500
UNCLASSIFIED

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISPERSION MEDIA WERE NAPHTHENIC AROMATIC AND PARAFFINIC SPINDLE OILS, THE SAME OILS DEAROMATIZED WITH OLEUM, AND HIGH VISCOSITY NAPHTHENIC PARAFFINIC OILS, USING 9PERCENT LI SOAPS OF C SUB10-12, C SUB12-14, C SUB14-16, AND C SUB17-19 FATTY ACIDS AS THICKENING AGENT. A SATISFACTORY GREASE WAS OBTAINED WITH NAPHTHENIC PARAFFINIC SPINDLE OIL ONLY WHEN THE LATTER WAS THICKENED WITH SOAP OF C SUB14-16 FATTY ACIDS. THE SOAPS OF ALL ACID FRACTIONS HAD LOW THICKENING EFFECTS IN HIGH VISCOSITY OILS. ADEQUATE LI GREASES WERE OBTAINED WHEN AROMATIZED OILS OR DISTILLATES WERE THICKENED WITH THE NARROW FRACTION OF FATTY ACID WHICH HAD THE OPTIMUM THICKENING EFFECT. FACILITY: MINKHGP IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

Acc. No. **AA0108722**

Abstracting Service: 3-70

Ref. Code:

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

244352 ROLL PELLETISER to produce hard alloys from powder comprises smooth sprung metal rolls (1) enclosed by a cowl (3) with a bin (4) at the top and a portioner (5). A rubber sleeve (7) in the channel (6) connects to the uppers of a vibro-screen (8) carried on shock absorbers (9). Above the screen deck is an intermediate deck (10) with paddle. The two screen decks are enclosed together with a channel (12). A bin (13) below the screen (8) has a vibrator (14) and worm (15) to feed the rolls.

27.5.63 as 838490/22-2. PARFENOV.F.I., A.P. CHERNOZUBOV.
V.P. MELNIKOV et al. (9.10.69) Bul 18/28.5.69. Class
16a. Int.Cl. C 21 b.

AUTHORS: Parfenov, F. I.; Chernozubov, A. P.; Mel'nikov, V. P.;
Kropisnov, M. K.; Yakovlev, V. P.; Nelidov, M. A.

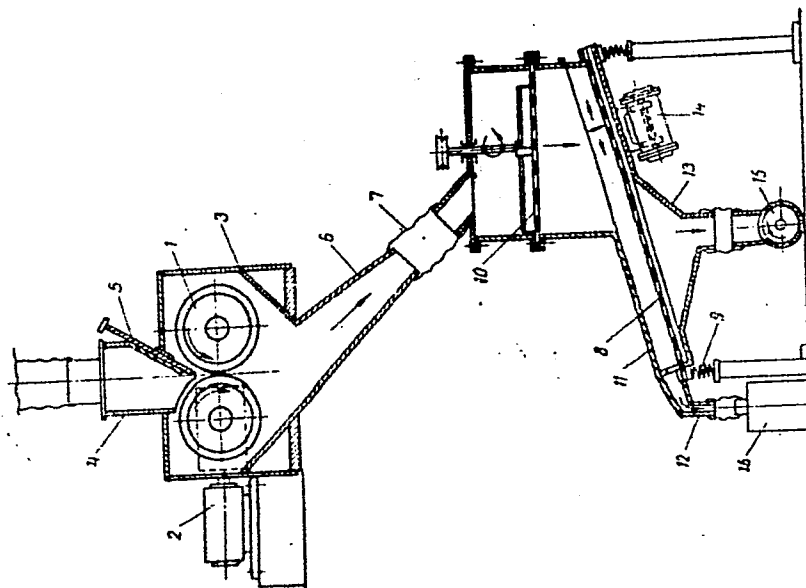
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REEL/FRAME

19900498

Acc. Nr.: AA0108722



Reel/Frame

19900499

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USSR

UDC 628.165.09

TOKMANTSEV, N. K., CHERNOZUBOV, V. B., and YEGOROV, A. P.

"Thirty Four Stage Experimental Industrial Desalination Unit With
Instantaneous Evaporation"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 7, 1973, pp 27-29

Abstract: The experimental industrial distillation unit with instantaneous evaporation is one of the world's largest units. In it for the first time the method of recirculating the seeding crystals is used to prevent the formation of sediment.

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1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SPECTROPHOTOMETRIC STUDY OF SULFUR SELENIUM, SULFUR TELLURIUM, AND
SELENIUM TELLURIUM SYSTEMS IN THE VAPOR PHASE -U-
AUTHOR--(02)-CHERNOZUBOV, YU.S., SELIVANOV, G.K.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 830
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, UV SPECTRUM, SULFUR COMPOUND,
SELENIUM, TELLURIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1692 STEP NO--UR/0076/70/044/003/0830/0830
CIRC ACCESSION NO--AP0118670
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENTIAL UV SPECTRA OF S PLUS SE, S PLUS TE, AND SE PLUS TE VAPOR MIXTS. WERE MEASURED AT 185-700 MMU AND AT 400-1000DEGREES. THE RESULTING PATTERNS WERE A SUM OF THE PURE COMPONENT ONES WITH ADDNL. MAX. AT 310, 360, AND 370 MMU CORRESPONDING TO COMPS. SES, TES, AND SETE, RESP. SES WAS STABLE AT 700-1000DEGREES AND SETE AND TES DISSOCD. SMALLER THAN 900DEGREES.

UNCLASSIFIED

USSR

SHUKALOVA, T. F., VYSHEPAN, Ye. D., and CHERNUKH, A. M.

"Serum Alkaline Ribonuclease Activity in Carbon Tetrachloride Poisoned Rats and Effects of an In Vitro Hepatic Inhibitor"

Byul. Eksperim. Biol. i Med., Vol 74, No 9, 1972, pp 50-53 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, No 5, 1973, Abstract No 5F2279)

Translation: Serum activity of free alkaline RNase was found to increase 3 h after intraperitoneal administration of CCl_4 to rats (0.3 ml/100 g in vegetable oil). In vitro addition to the serum of a partially purified inhibitor from the livers of intact rats, significantly inhibited the enzyme activity in sera obtained from control and CCl_4 -treated rats. After 3 h, the free RNase activity in the sera decreased, and then commenced to increase to normal levels. The significance of the changes in the activity of free alkaline RNase in the sera associated with CCl_4 treatment was discussed in relation to the transport of exogenous polymeric RNA to the liver.

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USSR

UDC 57.086.82.621.397.13

GRIBANOVSKIY, I. B., GUSEYNOV, A. M., and CHERNUKH, A. M., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Television Microscopy as a Method of Vital Microscopy"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 6, Nov/Dec 71, pp 78-81

Abstract: A television camera attached to a light microscope and functioning as a scanning device yields a picture of many advantages, due to the fact that the transmitting tubes are highly sensitive to visible light and to ultraviolet and infrared rays. As a result, by illuminating the object with short wave light, the resolving power of the microscope is magnified. By using monochromatic light of appropriate wavelength, objects indiscernible in regular light become visible on the television screen. By electronic magnification of the contrast, the image on the television screen can be magnified four times beyond the magnification of the microscope, without loss in resolution. Finally, the information about the object under investigation is transformed into electronic impulses which can be processed mathematically.

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UDC 616.988.25-022.395.42-084(-21)

CHUDINOV, P. I., NETSKIY, G. I., CHERNUKHA, A. D., YEVSTIGNEYEVA, N. S.,
PASTUKHOVA, A. N., SHCHEGLOVA, Ye. Ye., and PRIGORODOV, V. I., Omsk Scientific Research Institute of Natural Focus Infections, Ministry of Health RSFSR, and Novosibirskaya Oblast Sanitary Epidemiological Station

"Prevention of Tickborne Encephalitis in a Large City"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971,
pp 588-591

Abstract: The rapid growth of industrial centers in Western Siberia near endemic regions of tickborne encephalitis has increased the incidence of this disease among some urban populations. For example, in Novosibirsk, a city of approximately half a million people located on the Ob River, four cases were reported in 1955, 108 in 1962, and 141 in 1966. The city is located close to a number of densely wooded, heavily tick-infested areas often visited by hikers, vacationers, etc. However, the number of cases was reduced to 74 in 1969 mainly as a result of systematically dusting the forests most frequented by Novosibirsk residents with DDT (30 to 50 kg of 10% dust per hectare) and by selective vaccination of groups most vulnerable to tickborne encephalitis (geologists, regular hikers, etc.). It was not deemed necessary to provide mass vaccinations.

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MEDICINE
Epidemiology

USSR

UDC 911.3.616.988.25 (571.14)

CHERNUKHA, A. D., CHUDINOV, P. I., and PRIGORODOV, V. I.

"Results of a Study of Tickborne Encephalitis Epidemiology among Novosibirsk Inhabitants"

V sb. Vopr. infekts. patol. (Problems of Infection Pathology -- collection of works), Vyp. 2. Omsk, 1970, pp 29-30 (from RZh-Meditskinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.57)

[No abstract]

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USSR

UDC: 669.14:621.785:620.1

DORONIN, I. V., ZOZULYA, A. N., MAKHNEV, Ye. S., KILAPOV, V. A., and
CHEKALUKHA, A. I.

"Method for Estimating the Mechanical Characteristics of Steels Subjected to
Thermomechanical Treatment"

Moscow, Zavodskaya laboratoriya, No. 5, 1971, pp 606-607

Abstract: A relatively simple method is described for modeling the thermo-mechanical treatment process in high-alloy steels of the austenite and transitional austenite-martensite classes characterized by high γ -phase stability. The disadvantage of the method is the low deformation rate, which prevents it from completely imitating the conventional thermomechanical treatment process. The method has been successfully tested in processing steels of the Kh17N5M2, Kh17N5M3, and Kh21N6T types.

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USSR

UDC 61.914.018.58

MEDVEDEV, I. A., TARASENKO, V. A., and CHERNUKHA, A. P., Candidates of Technical Sciences

"Determining the Coefficient of Production Difficulty for Various Brands of Steel in Martin Works"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-Oct 70, pp 75-77

Abstract: A method for determining the coefficient of production difficulty for various steels is described by using examples from four Martin works at metallurgical plants. Steel is produced at all four plants from ore and scrap, using natural gas as the fuel and oxygen as the intensifier. The difficulty in producing various steels is determined by the time of refinement, which depends on carbon burn-out quantity. The coefficients make it possible to establish planned production goals, to stimulate the production of quality steels, and to improve the procedure for measuring work productivity. 2 tables.

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USSR

UDC 539.4.015

BERNSHTEYN, M. L., and CHERNIKHA, I. G., Moscow

"Preliminary Thermomechanical Processing of Alloyed Machine-Building Steel"

Moscow, Fizika i Khimiya Obrabotki Metallov, No 1, Jan-Feb 71, pp 61-65

Abstract: The hardening of machine-building steels (40KhINVA and 45KhNMFA) after preliminary thermomechanical processing is investigated in the case in which the cold plastic deformation precedes the thermal treatment. Microstructural investigations of the steels revealed the absence of a change in the grain size after preliminary thermomechanical treatment. Structural analysis of X-ray data indicates a succession of defects generated by the deformation during thermal aftertreatment.

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CHERNUKHA, V.V.

FEASIBILITY OF GENERATING MEGAGAUSS
MAGNETIC FIELDS USING HIGH-PRESSURE
COMPRESSED GAS LITHINGS

JPRS 59459
9 July 1973

Article by Ye. P. Vasilkov, A. A. Yashkov, A. B. Bogdanov, V. S. Golubov,
E. G. Koshchik, A. A. Nisnev, I. G. Poltor, A. A. Chernukha, Leningrad,
Journal Tekhnicheskoy Fiziki, Russian, Vol. 43, No. 7, 1971, 1299-1301, 1299 to press
June 1971, pp 429-438

The results of calculation of a setup, designed for
generating a megagauss pulse magnetic field in a large
volume, are presented in this article. The magnetic field
is amplified by compression in a cylindrical metal case,
pushed by high-pressure gas (1,000-2,000 atm). The expected
energy in the compressed magnetic field is several MJ and
the lifetime of the field is of the order of 10 sec. In
contrast to apparatus using explosives, the examined device
is nondestructive; in contrast to devices used for compressing
a shell with the energy of an electromagnetic field, the
examined system does not experience the problems of super-
power storage units and electromagnetic energy converters.

Introduction

Pulsed megagauss fields, especially in a large volume and with high
(-1 MJ and above) energies, are very important in modern industry. Thus,
they may be used for solving the problem of controlled thermonuclear
synthesis [1], investigating matter at superhigh pressures [2], generating
a pulse of electromagnetic energy at high power and energies (10^7 - 10^9 W,
 10^4 - 10^6 J). The literature contains the results of analysis of pulsed
megagauss fields by collapsing a metal case using explosives [3] or the
energy of a capacitor bank [4-6]. The use of explosives is technologically
difficult and leads to total destruction of the system; the use of
capacitor banks is limited for practical purposes to the energy level of
 10^4 - 10^5 J.

The use of the energy of compressed gas for collapsing a cylindrical
metal shell (liner), amplifying a magnetic field by "adiabatic" compression

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by the conducting cylinder, the penetrations of which are parallel to the magnetic force lines, is considered promising. The advantages of this method are: 1) the system is non-destructive; the advantages of this on strength are the same as in the case of the apparatus that uses electromagnetic energy, since the magnetic pressure that collapses the liner must have the same magnitude ($1,000-2,000 \text{ atm}$); 2) rapid application of external pressure on the liner in the examined system does not require the development of high-power commutating systems; the electromagnetic set-up requires presently unavailable storage units and electromagnetic energy converters (10^4-10^5 J , $10^{11}-10^{12} \text{ W}$); explosive systems require synchronous activation of the detonators; 3) the use of compressed gas makes it possible to obtain more efficient transmission of energy to the field in comparison with explosives and current inductive storage systems.

The most important part of the pneumatic apparatus is the system for breaking a cylindrical diaphragm that holds back all the gas pressure (the means of a cylindrical support grid). Our apparatus incorporates a high-speed magnetic "theta-pinch" type coil [7], which generates the pulse that releases magnetic pressure.

In contrast to electromagnetic systems, the rate of collapse of the liner in a pneumatic system is limited to the speed of sound in gas. When hydrogen is used at room temperature a radial liner velocity of 10^3 cm/sec is completely feasible and is attainable for most applications. Thus, in the case of thermonuclear experiments (compression of deuterium plasma in a magnetic field), the characteristic time of adiabatic compression is determined by a velocity of $\sim 10^5 \text{ cm/sec}$, which, finally, requires a very long magnetic field [8].

5. Description of Apparatus

The apparatus for storing and converting energy (Figure 1) consists of steel body 5, which houses support grate 3 and steel diaphragm 2, installed on it. In the cavity between the diaphragm and the body is gas (H_2 or He) under a pressure of $1,000-2,000 \text{ atm}$.

The diaphragm is a thin-wall steel cylinder with a wall thickness of the order of 1 mm , which is necessitated by the need for rapid and synchronous opening of all parts of the diaphragm (32).

Magnetic diaphragm rupture system 4 consists of six turns (35), wound on insulators. The design of the elements of the magnetic system is illustrated in Figure 2.

The diaphragm rupture system is powered by pulsed capacitors through coaxial sealed cables 6, insulated for 50 kV . Inside the support grate, at a distance of $1-2 \text{ mm}$ from its inner surface, is copper liner 1, 140 mm in diameter with a wall thickness of $1-2 \text{ mm}$. An initial magnetic field ($H_0 = 1.2 \cdot 10^6 \text{ O}$) is developed beforehand in the cavity of the liner.

USSR

CHERNUKHA, YU. G.

"Attention: Leptospirosis!"

Moscow, Zdorov'ye, No 6, (198) Jun 71, pp 12-13

Abstract: There are more than 100 types of these microbes. In humans the disease is acute; symptoms are fever, weakness, headache and muscle pain, abdominal and intestinal disturbance. Often there is skin rash and jaundice. In cattle, symptoms include jaundice and blood in the urine. Incidence is highest in the summer, when contact with water sources is the most frequent. Many wild animals are susceptible also, particularly rodents. Leptospira breed in rodent kidneys and are excreted into the water supply. Diseased animals can excrete Leptospira over a period of several months, contaminating drinking and bathing waters. Leptospira burrow into the tissue, particularly through mucous membranes of eyes, nose, and mouth. Once in the body, they multiply rapidly, appear in the blood, and cause disease. The disease causes up to 50% loss of livestock. Counter-measures include systematic destruction of rodents in areas of livestock breeding, farm storage, and around settlements in very damp and boggy areas. Drinking supplies must be guarded; livestock must drink water below the point where humans bathe or receive

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USSR

CHERNUKHA, YU. G., Zdorov'ye, No 6 (198) Jun 71, pp 12-13

drinking water. Humans should not bathe in ponds used for animal drinking water. Humans should drink only water from springs, when outdoors, or boil their water. Milk should be boiled in known areas of contamination. The' Mozdokskiy rayon of Northern Ossetian ASSR serves as a good example of an all-out effort to end leptospirosis outbreaks. Their program included separation of bathing and drinking sources, veterinary and medical preventive measures, vaccinations, and early disease treatment.

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USSR

UDC 576.856.72.095.6+576.856.72.097.2.083.3

ADUYEVA, T. P., CHERNUKHA, Yu. G., and KARIMOVA, Z. Kh., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Multiplication and Antigenic Activity of Leptospirae in Various Nutrient Media"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, pp 146-147

Abstract: Eighteen strains of Leptospirae belonging to 14 different serological groups (parasitic and saprophytic) were grown in six different media: Pervoort-Vol'f, Kortgof, Lyubashenko, GNKI (State Control Institute of Veterinary Preparations), and Beisman's synthetic medium, to which bovine albumin was added. Proliferation of cells was greatest in the synthetic medium with bovine albumin. Rabbits were used for determination of the antigenic activity of strain No 3705 and Pomona strain after 12 passages in the above media and in Terskis' medium. The greatest rise in antibody concentration was induced by strains grown in Terskis' medium. It is concluded that sera are still the best media for storing Leptospirae.

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Automatic Control Instruments & Systems

USSR

ZABLOTSKIY, G. A., CHERNUKHIN, V. Sh. (Institute of Semiconductors, USSR Academy of Sciences)

"A Method of Reducing Oscillations in Two-Point Program Control Systems"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, November 1970, pp 40-44

Abstract: The article concerns a two-point program control system in which a component proportional to a measured or specified quantity is introduced into the controlling signal at the output of the two-point regulator. Equations are derived with which the basic technical characteristics of such an automatic control system can be determined. It is shown that in such a system a number of technical characteristics are better than in two-point program control systems without the introduction of a proportional component.

The article includes 16 equations. There are two references. The article is endorsed by the Leningrad Institute of Precision Mechanics and Optics.

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USSR

UDC 621.526

CHERNUKHIN, V. SH., and ZIMIN, V. A.

"Tracking System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 55, Author Certificate No 258421 Class 21c.

Abstract: This author certificate introduces a tracking system consisting of a comparator circuit with an alternating-voltage source, a preamplifier, a phase sensitive cascade, two identical channels consisting of an amplifier and a keying unit, a switch, a step-by-step motor, and a reducer. To eliminate interferences from the non-working switch input of the step-by-step motor, each system channel is provided with a diode rectifier, a limiting resistor, and a supplementary transistor, the emitter of which is connected to the amplifier base. The amplifier output is connected to the base of the supplementary transistor of the opposite channel by means of the diode and resistor in series.

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Ref. Code: UR 0482

USSR

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CHERNUKHIN, V. SH., and ZIMIN, V. A.

"Tracking System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 55, Author Certificate No 258421 Class 21c.

Abstract: This author certificate introduces a tracking system consisting of a comparator circuit with an alternating-voltage source, a preamplifier, a phase sensitive cascade, two identical channels consisting of an amplifier and a keying unit, a switch, a step-by-step motor, and a reducer. To eliminate interferences from the non-working switch input of the step-by-step motor, each system channel is provided with a diode rectifier, a limiting resistor, and a supplementary transistor, the emitter of which is connected to the amplifier base. The amplifier output is connected to the base of the supplementary transistor of the opposite channel by means of the diode and resistor in series.

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USSR

UDC 911.3.613.11(98)

CHERNUKHO, A. N.

"Adaptation to the Dark After a Polar Night in the Far North"

V sb. Akklimatiz. i krayev, patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 126-128 (from h-19436. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.51 by T. Koretskaya)

Translation: Research on adaptation to the dark was conducted in February 1969 on 52 Northerners in the settlement of Amderma immediately at the end of the polar night. It is postulated that Northerners have some increase in sensitivity to light after the polar night. The length of stay in the North did not seem to have statistical significance. No correlation was found between adaptation to the dark and either work conditions or meteorological factors.

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USSR

VERSHIGORA, A. Ye., DYACHENKO, S. S., LISUNKINA, I. K., MORGUNOV, I. N.,
NOCACHEVSKIY, I. I., TEREKHOV, S. N., CHERNUSHENKO, Ye. F., and YACOB, S. L.,
Editors, Ministry of Health, Ukrainian SSR

Immunologiya. Respublikanskiy mezhdedomstvennyy sbornik (Immunology.
Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

Translation: Annotation: Articles included in the collection deal with the
most pressing problems of theoretical and practical immunology, viz., mechanism
of the formation of antibodies and immunological reactivity, allergy and clinical
and experimental immunopathology, specific prophylaxis, and reactogenicity
of vaccines and postvaccinal complications. Works aimed at devising methods
of immunological investigations help to solve problems of modern immunology.

The previous four issues of this collection were published under the title of
"Voprosy Immunologii" (Problems of Immunology).

The collection is of interest to scientific workers, practitioners of various
specialties, and to senior students of medical institutes.

191 pages. 52 Russian articles with Russian abstracts.
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USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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USSR

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USSR

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10/10

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Power Systems

USSR

UDO 621.315.05:621.3.015

VENIKOV, V.A., Dr. of Technical Science; MARKOVICH, I.M., RCKOTYAN, S.S.,
CHERNYA, G.A., Engineer [Moscow]

"Choice Of A System Of Rated Voltages For The Power Pools In The United Power
Grid Of The USSR"

Elektrichestvo, No 7, July 1972, pp 1-4

Abstract: The problem is considered of the choice of voltages in electrical networks from an immediate and distant viewpoint. It is concluded that the best solution for a single power system for the European part of the USSR and a single power system for the USSR is the creation of a power pool with a single system of rated voltages. Technical and economic analysis and operational tests show that for USSR conditions the optimum system of rated voltages is 35-110-220-500-1150 kv. Introduction into the USSR at the end of 50 years, of a voltage of 330 kv did not give the expected technical and economic advantages. In the last 10-12 years, the intense increase of 330-kv nets in the grid system of the south and the failure of this voltage system to assure reliability of exploitation of a power energy interconnection with a length up to 1500 km lead to the introduction in the USSR of 750 kv voltage and the formation in the country of territories with two different systems of rate voltage. Henceforth, use of 330-kv voltage must be limited to the grid system of the south and northwest. A

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USSR

VENIKOV, V.A., et al, Elektrichestvo, No 7, July 1972, pp 1-4

system of voltages of 220-500 kv, including a large part of the country, assures at present reliability and economical operation of a power system; henceforth, in the USSR the introduction of a subsequent system of a-c voltage of the 1150-kv class is necessary, which must span all the territory of the country. The problem of linking 1150-kv and 750-kv nets is subject to subsequent study, particularly because they also depend on the choice of the subsequent stage of voltages in the power systems of the country--members of the Council For Mutual Economic Aid in Western Europe. A combination of system-generating functions of the 1150-kv ac lines with long-distance transfer electrotransmission of d-c is subject to study. 1 ill. 2 ref.

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1/2 007 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ASSIMILATION OF ACETATE BY RHODOPSEUDOMONAS PALUSTRIS -U-
AUTHOR--(03)-CHERNYADYEV, I.I., KONDRATYEVA, YE.N., DUMAN, N.G.
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 24-29
DATE PUBLISHED-----70
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TOPIC TAGS--PSEUDOMONAS, CARBON ISOTOPE, PHOTOSYNTHESIS, ACETATE, BACTERIA
MUTATION
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PROXY REEL/FRAE--1990/1456 STEP NO--UR/0220/70/039/001/0024/0029
CIRC ACCESSION NO--AP0109516
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109516

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RHODOPSEUDOMONAS PALUSTRIS ASSIMILATES 2-C PRIME14 NEGATIVE ACETATE BOTH UNDER ANAEROBIC AND AEROBIC CONDITIONS ON LIGHT AND UNDER AEROBIC CONDITIONS IN DARKNESS. THE GREEN MUTANT OF RH. PALUSTRIS, UNCAPABLE FOR PHOTOSYNTHESIS, INCORPORATES 2-C PRIME14 NEGATIVE ACETATE UNDER AEROBIC CONDITIONS BOTH ON LIGHT AND IN DARKNESS. THE CHARACTER OF THE PRODUCTS FORMED, C PRIME14 DISTRIBUTION DURING ASSIMILATION OF LABELED ACETATE BY THE PARENT STRAIN OF RH. PALUSTRIS AND ITS MUTANT AS WELL AS ALMOST COMPLETE INHIBITION OF C PRIME14 NEGATIVE ACETATE INCORPORATION IN THE CELLS IN THE PRESENCE OF FLUOROACETATE AND PARTIAL INHIBITION IN THE PRESENCE OF MALONATE SUGGEST FUNCTIONING OF THE REACTIONS OF THE TRICARBOXYLIC ACID CYCLE AND OF THE GLYOXYLATE CYCLE IN THESE BACTERIA BOTH ON LIGHT AND IN DARKNESS.

UNCLASSIFIED

USSR

UDC 539.3

CHERNYAK, A. M.

"Use of a Discrete Model in Calculating Plates Under Plane Problem Conditions"

V sb. Issled. po stroit. konstruktsiyam (Studies on Structures -- Collection of Works), Tomsk, Tomsk University, 1972, pp 171-176 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V180)

Translation: A modification of the finite element method based on substitution of the continuous model with a discrete model is proposed for calculating stresses in plates under a plane deformation. The plate is replaced by a set of beams-bands connected at a finite number of points, making it possible to carry out the calculation by known methods of structural mechanics. It is noted that this approach can be effective in calculating plates of complex shape with projections, openings, and arbitrary conditions for reinforcement both at the edges and inside the contour. A sample calculation is given.
B. A. Kuranov.

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USSR

000 621.791.052:639.4.001.14:000.71'S

POSPEROV, A. S., CHERNYAK, A. Ya., and SVETLIN, A. V.

"Properties of V92Ts Alloy Weld Joints After Prolonged Heating at 70° C"

Moscow, Metallovedeniya i Termicheskaya Obrabotka Metallov, No 11, Nov 76, pp 35-44

Abstract: Weld joints from the V92Ts alloy of the Al-Zr-Mg system were used in an investigation of the effect of prolonged heating at 70° C over a period of 1,000 and 3,000 hrs on the mechanical properties, susceptibility to cracking during bending impact, overall corrosion resistance, and resistance to cracking under stress. During aging at 20° C before and after welding, as also at 70° C over a period of 1,000 hrs increases the tensile strength of the joints, especially with the use of V92sv and No 11 additive rods and less with the use of Mg40s and Mg6 rods. After interrupted aging additional heating has practically no effect on tensile strength. Additional heating increases the crack susceptibility along the seam and fusion zone and also of the basic metal. Prolonged heating at 70° C over a period of 1,000 hrs after tempering at 201° C 2-4 hrs does not lead to stress corrosion. Weld joints from No 11 weldin rods have the lowest susceptibility to corrosion under stress and those of Mg6 -- the highest.

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USSR

UDC 615.616.24-003.656.6

MAYBORODA, S. I., MAYBORODA, A. A., CHERNYAK, B. A.

"Effect of Foam Plastic Dust on the Lungs of Experimental Animals"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp. 110, pp 43-45 (from RZh--Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.898)

Translation: Fifty milograms of phenol formaldehyde resin molding coater in 0.5 ml of physiological solution were administered intratracheally to rats. During histologic studies for two months of observations, an exudative-proliferative reaction was noted in the lungs with subsequent development of polypose panbronchitis and initial manifestations of pneumosclerosis. The degree of expression of fibrosis depended on the magnitude of the foam plastic dust accumulations in the lung tissue. It is proposed that the foam plastic acting on the lung tissue causes the formation of autoantigens and that a significant role in the development of the pathologic processes played by the autoimmune component. USSR, Irkutsk, Medical Institute.

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1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--KINETICS OF THE THERMAL DECOMPOSITION OF ALLYL HYDROPEROXIDE -U-
AUTHOR--(04)-CHERNYAK, B.I., KOSHOVSKIY, B.I., TYAGLO, V.B., KUCHER, R.V.
COUNTRY OF INFO--USSR
SOURCE--DOPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32(3), 256-61
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DECOMPOSITION, HYDROPEROXIDE, ACTIVATION ENERGY,
SOLVENT ACTION, REACTION KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0782 STEP NO--UR/0442/70/032/003/0256/0261

CIRC ACCESSION NO--AT0132880
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132880

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECOMPN., STUDIED IN PHCL, BUOH, AND ACOH, WAS 1ST ORDER; THE RATE CONST. AND THE ACTIVATION ENERGY DECREASED WITH THE INCREASING POLARITY OF THE SOLVENT. THE PRODUCTS WERE CH SUB2:CHCH SUB2 OH AND CH SUB2:CHCHO, AND ME(CH SUB2) SUB2 CHO AND ACH IN ADDN. IN BUOH AND ACOH, RESP. FACILITY: DONETS. DERZH. UNIV., DONETSK, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ROLE OF THE SOLVENT IN THE COOXIDATION OF PROPYLENE AND
ACETALDEHYDE AT ATMOSPHERIC PRESSURE -U-
AUTHOR--(02)-ANDRIANOV, A.A., CHERNYAK, B.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3) 175-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--OXIDATION, PROPYLENE, ALDEHYDE, SOLVENT ACTION, PHTHALATE,
PEROXIDE, ORGANIC OXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0826 STEP NO--UR/0064/70/046/003/0175/0177
CIRC ACCESSION NO--AP0124493
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124493

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE COOXION. OF PROPYLENE (I) AND ACH BY 2:3:1 O I ACH AT 140DEGREES, THE USE OF DIMETHYL PHTHALATE (II) AS SOLVENT MARKEDLY INCREASED THE SELECTIVITY OF OXIDN. TOWARDS THE FORMATION OF I OXIDE FROM I AND ACOH FROM ACH; IN AN OPEN SYSTEM, THE DEGREES OF CONVERSION OF I TO I OXIDE AND ACH TO ACOH WERE 23 AND 17.5PERCENT RESP., AND THE FORMATION OF PEROXIDES WAS LESS THAN 0.2 VOL PERCENT. WHEN THE OXIDN. WAS CARRIED OUT IN II, AN INCREASE IN THE TEMP. (BETWEEN 110 AND 170DEGREES) REDUCED THE TIME NEEDED TO OBTAIN THE MAX. I OXIDE CONCN. FROM 160 TO 80-90 MIN, BUT ABOVE 140DEGREES THE TEMP. HAD LITTLE EFFECT ON YIELD. THE USE OF OTHER SOLVENTS (PHCL, PHNO SUB2 PHET, PHPR ISO, SILICON OIL, TETRADECANE) GAVE MORE PEROXIDES AND LITTLE I OXIDE.

UNCLASSIFIED

Analysis and Testing

USSR

UDC 669.018.44

CHERNYAK, G. S., VORONIN, N. L., D'YAKONOVA, V. A., MIRONOVA, V. P., and
~~ZUBRILOVA, V. A.~~

"Estimating the Quality of Heat-Resisting Vacuum-Melted Alloys by the Method of Mathematical Statistics"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 55-63 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I749 by authors)

Translation: The article describes results of a "Minsk-22" computer-aided statistical analysis of control determinations of the principal chemical elements, the testing of mechanical properties, and estimates of grain size in the macrostructure of EI437BU and EP109 alloys after vacuum arc refining. It is shown that the distribution of most of the criteria selected for estimating the quality of EI437BU alloy is governed by the normal distribution law and that the strength and ductility characteristics of the alloy are most affected by the macrograin size of upset billets, which in turn depends on the C and Al content of the alloy. It was found that an inverse relation exists in alloy EP109 between the grain size observed in the macrostructure of bars and strength characteristics. Two illustrations. Four tables.

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USSR

UDC 669.245:519.28

CHERNYAK, G. S., VORONIN, N. I., D'YAKONOVA, V. A., MIRONOVA, V. P., and ZUBRILOVA, V. A.

"Mathematical Statistics Estimation of Quality of Vacuum-Produced Heat-Resistant Alloys"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 55-63

Translation: Results are presented from computerized statistical processing of the results of test determinations of the main chemical elements, tests of mechanical properties, and estimates of grain size in the macrostructure of the alloys EI437BU and EP109 following vacuum arc remelting.

It is demonstrated that the distribution of most criteria selected for evaluation of the quality of EI437BU alloy follows the normal distribution and that the greatest influence on the characteristics of strength and plasticity of the alloy is that of the grain size of billets, which in turn depends on the content of carbon and aluminum in the alloy.

It is established that EP109 alloy shows an inverse dependence between grain size observed in the macrostructure of bars and strength characteristics. 2 figures; 4 tables.

1/1

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C
Materials

USSR

UDC: 681.396.6:621.315.6

CHERNYAK, K. I.

"Nonmetallic Materials in Marine Electrical and Electronic Equipment. A Handbook. Second Edition, Revised and Enlarged"

Nemetallicheskiye materialy v sudovoy elektro- i radiotekhnicheskoy apparature. Spravochnik. Izd. 2-ye, pererabot. i dop. (cf. English above), Leningrad, "Sudostro-
eniye", 1970, 559 pp, ill. 2 r. 28 k. (from RZh-Radiotekhnika, No 10, Oct 70,
Abstract No 10V413 K)

Translation: Collected in this handbook is information on synthetic polymer materials which have found extensive application in marine electrical and electronic equipment. Data are given on plastics, molded and impregnated composites, adhesives, varnishes, foam plastics, sealants, films, fibers and other materials, as well as pertinent technological information on treating, making and using these materials. The book is written for a broad class of engineering and technical workers in shipbuilding and other industrial sectors: designers, technologists, laboratory workers, and others engaged in the development and manufacture of marine or any other type of electrical or electronic equipment. The book may be used as a text for students majoring in the appropriate fields in middle and upper institutions of higher education.

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USSR

UDC 621.762.001

BONDARENKO, V. P., CHERNYAK, L. V., and SHLYUKO, V. Ya.

"Alloying of Lanthanum Hexaboride With Hafnium"

Vestn. Kiyev. politekhn. in-ta. Ser. mashinostr. (Herald of Kiev Polytechnic Institute: Machine-Building Series), 1971, No 8, pp 178-180 (English summary) (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G246 by authors)

Translation of Abstract: The authors studied the coreduction of La_2O_3 and HfO_2 by boron in vacuum. An alloy was obtained containing a solid solution of Hf in LaB_6 and HfB_2 and possessing elevated thermostability as compared with pure LaB_6 . One table. Bibliography with four titles.

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Acc. Nr.: ARO103058

Ref. Code: UR0000

JPRS 49937

Optical Properties of Water Droplets in Microwave Range

(Abstract: "Optical Properties of Water Droplets in the Microwave Range,"
by M. M. Chernyak; --, Trudy Vysokogornogo Geofizicheskogo Instituta, No 14,
1969, p 215)

/From: Moscow, Referativnyy Zhurnal, Geofizika, Svodnyy Tom, No 1, 1970,
1B947

Computations have shown that as a result of temperature changes the
attenuation coefficient for a water droplet can vary by 50% and the absorp-
tion coefficient can vary by 30%. Depending on droplet size and emission
wavelength the indicatrix of scattering for the droplet is either extended
forward (Mie effect) or backward (Thompson effect). The degree of elongation
of the indicatrix of scattering for an elementary volume of precipitation is
dependent on both the wavelength and on the size distribution of droplets
and precipitation intensity.

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1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ANAEROBIC SPLITTING OF CARBOHYDRATES AND THE ACTIVITY OF THE
ENZYMES IN THROMBOCYTES DURING HEMORRHAGIC THROMBOCYTEMIA -U-
AUTHOR-(03)-CHERNYAK, N.B., TIMOFEYeva, L.M., FRINOVSKAYA, I.V.
C
COUNTRY OF INFO--USSR
SOURCE--PROBL GEMATOL PERELIV KROVI 15(2): 44-49. 1970.
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ENZYME ACTIVITY, THROMBOCYTE, ADENOSINE TRIPHOSPHATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605015/812 STEP NO--UR/9080/70/015/002/0044/0049
CIRC ACCESSION NO--AP0140561
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--0405

CIRC ACCESSION NO--AP0140561

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE THROMBOCYTES OF 13 PATIENTS SUFFERING FROM HEMORRHAGIC THROMBOCYTEMIA THERE WAS A LESS INTENSIVE ACCUMULATION OF THE LACTATE IN THE ANAEROBIC, AND, ESPECIALLY, IN THE AEROBIC CONDITIONS IN COMPARISON WITH DONOR THROMBOCYTES. THE ACTIVITY OF HEXOKINASE, GLUCOSE-6-PHOSPHATE DEHYDROGENASE, PHOSPHOGLYCERITE ALDEHYDE DEHYDROGENASE, AND OF LACTATE DEHYDROGENASE SHOWED NO SIGNIFICANT DEVIATION FROM THE NORMAL. THE CONTENT OF ATP WAS REDUCED OR WITHIN THE NORMAL RANGE, THE ADP CONTENT WAS REDUCED; IN THIS CONNECTION THE ATP-ADP RATIO WAS CONSIDERABLY INCREASED IN COMPARISON WITH THE NORMAL LEVEL. ENDOGENOUS ATP IN THE PATIENTS' THROMBOCYTES SPLIT IN INCUBATION MORE INTENSIVELY THAN IN THE THROMBOCYTES OF HEALTHY PERSONS. FACILITY: CENT. INST. HEMATOL. BLOOD TRANSFUS., MIN. HEALTH USSR, MOSCOW, USSR.

UNCLASSIFIED

Steels

USSR

UDC 669.01:539.4.015

CHERNYAK, N. I., NIZHNIK, S. B., and OSTROVSKAYA, V. P., Institute of Mechanics, Academy of Sciences Ukrainian SSR, Kiev

"Change in the Structure and Mechanical Properties of Stainless Martensite-Aged Steel During Plastic Deformation"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 6, 1970, pp 28-32

Abstract: The phenomenon and several structural causes of hardening of EP-288 and EP-410 stainless Martensite-aged steels were studied with a pre-determined combination of preliminary deformation and aging. Preliminary deformation intensifies the hardening process and significantly increases the strength of the steel with optimal treatment conditions. The structural hardening factors are related to the influence of preliminary deformation on the stress state of the Martensite in the aged steel, the process of separation and the nature of the distribution of intermetallide and carbide phases.

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USSR

UDC 620.172.2

CHERNYAK, N. I., BASTUN, V. N., PELEPELIN, V. M., SHKARAPUTA, L. M., Kiev

"Deformation Curves of VT-6S and VT-14 Titanium Alloys at 20-400°C"

Kiev, Problemy Prochnosti, No 6, 1972, pp 65-67.

Abstract: Results are presented from tensile testing of heat-treated VT-6S and VT-14 titanium alloys at 20-400°C. Deformation curves are presented. Within limits of deformation of approximately 1%, the curves can be approximated by a second-order equation. Changes in the primary mechanical characteristics of the alloys with increasing temperature are shown. Tubular thin wall specimens were tested, with outer diameters of 29.5 mm, wall thickness 0.75 mm, and gage length 100 mm. For both alloys, the maximum divergence of calculated data from experimental data is not over 4%. The data produced indicate that the influence of elevated temperature on the characteristics tested is approximately the same for both materials.

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USSR

UDC 620.17

CHERNYAK, N. I., POLEVOY, V. A.

"Device for Testing Pipe Samples under Conditions of Repeated Proportional Loading under an Axial Force and Internal Pressure"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1971, vyp. 1, pp 107-114 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11V1210)

Translation: A description is presented of a hydraulic and electric schematic of a device providing for proportional loading of pipe samples with respect to two main areas (static and cyclic loading with a frequency of up to 25 cycles per minute), axial loading to 1.5 tons, and an internal pressure up to 500 kg/cm². Clamping of the sample is used in the device. The deformation diagrams were recorded by electronic potentiometers. The bibliography has 11 entries.

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AP9037070

CHEMICAL ABST.

9/69

UR0441

52655c Effect of plastic deformation on the strengthening of martensitic stainless steel. Chernyak, N. I.; Nizhnik, S. B.; Ostrovskaya, V. P. (Inst. Mekh., Kiev, USSR). *Dopov. Akad. Nauk Ukr. RSR, Ser. A* 1969, 31(6), 565-8. (Russ). The effect of plastic deformation (compression), followed by aging, on the steel structure and mech. properties was studied by using Kh16Nb stainless steel, contg. C 0.07, Cr 16.0, Ni 7.4, Mn 0.34, Si 0.40, P 0.017, and S 0.006%. The pretreatment of steel consisted in quenching from 1000° and exposure for 2 hrs. at -80°. After these treatments, the steels contained 85% martensite and 15% residual austenite. Plastic deformation of cylindrical samples, 10 mm. in diam. and 15 mm. high, was made by uniaxial compression in 100-ton hydraulic press. The amt. of residual austenite was detd. by comparison of intensities of lines (111) γ , and (110) α . Plastic deformation of quenched steel resulted in decompn. of residual austenite. Increase in parameters of crystal lattice of martensite was observed within 0.8% range of deformations. Increases in hardness and microhardness were observed with increased degree of plastic deformation in the region

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of small deformations ($\leq 5\%$). The plastic deformation decreased the temp. of annealing at which the strengthening begins and increased strength of steel under treatment conditions optimal for nondeformed state (at 400° of annealing temp.). This could be caused either by an increase in d. of dislocations and fixing of them by C atoms or by the effect of plastic deformation on the formation of hardening phase during aging. BLJR

p. 1

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1941 1193

USSR

UDC: 669.15--194:546.76

BASTUN, V. N., GOLOVINSHAYA, T. M., and CHERNYAK, N. I., Institute of Mechanics, Academy of Sciences, Ukrainian SSR, Kiev

"Investigating the Yield Point and the Structural State of the Initial Anisotropy of a Titanium Alloy"

Kiev, Fizika i Khimiya Obrabotki Materialov, Vol. 6, No. 5, 1970, pp 21-24

Abstract: As the subject of their investigations, the authors chose tubes made of VT-1 titanium alloy. These were given uni-axial and biaxial stretching, and their structure was taken into account in the measurements. This approach was used because the effect of plastic deformation on the structural state has barely been touched on, and there are no data on the importance of the tension state of the material. The preliminary results of the tests showed that the material has significant anisotropy of the elastic and durability characteristics. Specimens were tubes with an outside diameter of 32.5 mm and a wall thickness of 2.2 mm; after the mechanical processing, the wall thickness was 0.7 mm and the diameter 30.5 mm. The tests were made on the TsDMU-

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USSR

BASTUN, V. N., et al., Fizika i Khimiya Obrabotki Materialov,
Vol 6, No 5, 1970, pp 21-24

30t machine, in which the specimens can be given axial loads and internal pressures in various permutations. In the experimental procedure, measurements of the longitudinal and transverse deformations were made through the use of mechanical tensometers with micron indicators. The radial deformations were found by computations based on the assumption of elastic change in the volume of the material. X-ray analysis showed that undistorted coarse-crystalline structure of α -titanium, and single-axial transverse stretching up to the point of 2% plastic deformation caused no marked change in the material's crystalline structure. There were structural variations in regions of small deformations only with deformation components coinciding with the tube axis.

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USSR

UDC 539.385

CHERNYAK, N. I., POLEVOY, V. A.

"Low-Cycle Strength of Steel Under Repeated Elastic-Plastic Deformation in Plane Stressed State Conditions"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1971, No. 1, pp 63-72 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12V1475)

Translation: An experimental study of low-cycle strength of thin-walled tubular samples under axial tension-compression and internal pressure was conducted. Samples of 1Kh18N10T steel were tested under relationships of longitudinal and transverse stresses of 0, 0.5, 1.0, 1.75, 3.0 on a base of $0.5 \cdot 10^4$ cycles with a frequency of 25 cycles per minute. Measures were taken to ensure an approximately proportional change in the stress component. Values of the limiting static deformations are given and the kinetics of cyclic deformations under low-cyclic loading were traced as a function of the relationship of the stresses. A considerable change was noted in the shape of the samples and the region of quasistatic, fatigue and the transition character of the fracture is shown, and the effect of distortion on the character of the load diagram

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CHERNYAK, N. I., POLEVOY, V. A., Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii, 1971, No. 1, pp 63-72

and the form of the rupture is analyzed. Longevity curves under low-cyclic loading are constructed and limiting state curves are shown in longitudinal and transverse stress coordinates in terms of the number of cycles to breakdown. It is noted that it is impossible to obtain a single curve for low-cyclic breakdown when the data is expressed in terms of the intensities of the stresses. 13 ref. A. P. Gusenkov.

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- 70 -

USSR

UDC 669.01:539.4.015

NIZHNIK, S. B., PELEPELIN, V. M., USIKOVA, G. I., and CHERNYAK, N. I., Kiev
"Mechanical Properties and Structure of Stainless Martensite-Containing Steel
in the Hardened State"

Kiev, Problemy Prochnosti, No 12, Dec 70, pp 41-44

Abstract: The modes for hardening of types Kh16N6 and Kh16N5D3 steel leading to an increase in the resistance to plastic deformation in extension and compression are determined on the basis of a combination of processes of preliminary deformation and aging. The hardened state of Kh16N6 steel is characterized by formation of a more highly stressed submicrostructure of the martensite and coherently bonded segregations (in comparison with the tempered state). Kh16N5D3 steel is characterized by a decrease in the number of defects in the martensite and segregation of incoherent particles of the hardening phase.

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U S S R

UDS 621 : 539.4.001.24

N. I. Chernyak and D. A. Gavrilov, Institute of Mechanics, Academy of Sciences
Ukrainian SSR

SOPIROTVLENIYE DEFORMIROVANIYU METALLOV PRI POVTORNOY STATICHESKOY NAGRUZHENII
(Resistance to Deformation of Metals Under Repeated Static Loading), Kiev, 1971,
135 pp, biblio, illus, 2,000 copies printed

The book discusses the characteristics of the changes of the mechanical properties of metals during repeated static loading. For an elastoplastically deformed body a mechanico-statistical model is presented which affords the possibility of describing the most essential features of diagrams for repeated deformations. The authors consider some functional equations which characterize the process of cyclic deformation.

The book is intended for scientific and engineering personnel engaged in the study of the strength and ductility of metals.

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USSR

UDC 621.397.7

SIVAKOV, V. T., CHERNYAK, N. I. [Kiyevsk. otd. Tsentr. n.-i. in-ta svyazi --
Kiev Division of the Central Scientific-Research Institute of Communication]

"Scanning Device for Facsimile Apparatus"

USSR Author's Certificate No 250217, Filed 14 July 65, Published 22 Jan 70
(from RZh--Elektrosvyaz', No 9, September 1970, Abstract No 9.64.225P)

Translation: A scanning device is proposed in which the scanning element is constructed in the form of a spiral cylindrical coil which has a triangular shape, with a spacing equal to the length of a line of the image. The lateral surfaces of the coil are bent inward in order to assure focusing of the incident and reflect light beam. The crest of the triangular coil is turned to the outside and a wire which serves as a recording electrode is run to the crest. This makes it possible to increase the rate of scanning and to utilize the scanning device with electrochemical and electrothermal recording of the image. One illustration. G. M.

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USSR

UDC: 537.312.62:539.89

GALKIN, A. A., Academician Ukrainian Academy of Sciences;
SVISTUNOV, V. M.; CHERNYAK, O. I.; and BELOGOLOVSKIY, M. A.

"Effect of Pressure on the Phonon Impurity Zone of a Pb-In Alloy"

Moscow, Doklady Akademii Nauk SSSR, No 4, 1 Jun 73, pp 815-817

Abstract: The purpose of this study is to determine experimentally the change of characteristics in the oscillatory spectrum of lead with a slight impurity of indium when the substance is put under pressure. As in experiments executed earlier by the same authors (e.g., Phys. Stat. Sol., 30, KI 07, 1968) fine-film tunnel materials of the superconductor-dielectric-superconductor type, as the most sensitive detectors of changes in density of the material, were used. Methods of preparing these materials and their Al-Al₂O₃-PbIn contacts are described. It is found that under pressure, with a reduction in volume, the phonon spectrum of the metal is shifted in the high-energy direction. An illustration is given of the shift of the second harmonic for an Al-Al₂O₃-Pb_{0.93}In_{0.07} specimen under pressures of zero and 9 kbar. The results of this work were reported to the 17th All-Union Conference on Low-Temperature Physics, held in Donetsk, 26-30 June 1972. The authors thank

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USSR

UDC: 537.312.62:539.89

GALKIN, A. A., et al, Doklady Akademii nauk SSSR, No 4, 1973,
pp 815-817

V. G. Bar'yakhtar and V. V. Shevtsov for their assistance.

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TECHNICAL TRANSLATION

(2)

FSTCJHT.33, 169-73

ENGLISH TITLE: Principles of Radar and Meteorological Radar Devices

FOREIGN TITLE:

AUTHOR: O. G. Korol' and R. D. Chernykh

SOURCE:

Leningrad: Gidrometeorologicheskoye izdatel'stvo, 1971, pp. 214-330 (chapters 8, 9, and 10)

GRAPHICS NOT REPRODUCIBLE

Translated for FSTC by LEO KATNER ASSOCIATES

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This translation was accomplished from a xerox manuscript. The graphics were not reproducible. An attempt to obtain the original graphics yielded negative results. Thus, this document was published as is, in order to make it available on a timely basis.

USSR

UDC 547.26.012.1

NIKANTSEV, E. M., ZAVLITONINA, A. I., GOROKHIN, S. P. and CHERNYAK, S. M.
Moscow State University imeni M. V. Lomonosov

"The 1,3-Alkylenedithiophosphites"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 3, 1972, pp 593-595

Abstract: Double-substituted phosphorus acid esters comprise an important and widely studied class of organophosphorus compounds. Their dithiole analogs -- not to mention being the source of information on the electron effects in the $-S-P(=O)-$ triad -- are valuable raw materials for synthesis of many useful organophosphorus-sulfur compounds. But unfortunately the acid dithiophosphites are virtually unstudied, either as regards synthesis or properties. To a benzene solution of 1,3-alkylenedithiolo-chlorophosphite were added equimolecular amounts of water and triethylamine, in tetrahydrofuran solution. This yielded six different 1,3-alkylenedithiophosphites, these being crystalline substances with unexpectedly high melting points which were readily soluble in organic solvents. Yields, melting points, compositions, formulas, and, in the case of 1,3-propylenedithiophosphite, some additional information, were determined.

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USSR

UDC 669.716:621.771

MALENOK, F. T., and CHERNYAK, S. N.

"Improvement in the Production of Thin Rolled Aluminum"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970,
pp 160-165, resume

Translation: An account is given of the history of the development of rolled foil production at the Leningrad Plant for the Processing of Non-Ferrous Metals imeni K. Ye. Voroshilov. Principal conditions of the technology of foil production are discussed. Achievements of the plant in the development of aluminum casting and rolling during the last ten years are indicated. Two figures, two bibliographic references.

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USSR

UDC 620.178.16:669.973

PRESNYAKOVA, G. N., LYUBARSKIY, I. M., UDOVENKO, V. F., MAR'YAK-HINA, YE. I., ~~CHERNYAK, S. S.~~, Physico Technical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR

"Friction and Wear at Low Temperatures"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 9-12

Abstract: The friction and wear of G13L steel with respect to 40Kh steel were investigated in a high vacuum ($5 \cdot 10^{-7}$ mm Hg) and in air at room temperature and at -190°C . Low-temperature vacuum manipulators made it possible to cool the samples to cryogenic temperatures, create normal loading, and transmit data to a measuring system outside the chamber. It was found that in the presence of friction in air and in a vacuum, low temperatures had no effect on wear for the indenters (steel G13L). For a ring (steel 40Kh), lowering the temperature in the atmosphere does not change the wear, but lowering the temperature with friction in a vacuum increases the wear sharply. The friction coefficient increases on lowering the test temperature in a vacuum; when testing in air, it is less than in a vacuum and is 1/2

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PRESNYAKOVA, G. N., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 9-12

independent of the temperature. The surface layer was strained in the presence of friction more intensely in a vacuum than in air.

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USSR

UDC 620.178.16:669.973

PRESNYAKOVA, G. N., LYUBARSKIY, I. M., UDOVENKO, V. F., MAR'YAK-HINA, YE. I., CHERNYAK, S. S., Physico Technical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR

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PRESNYAKOVA, G. N., et al., Metallovedeniye i Termicheskaya
Obrabotka Metallov, No 3, 1971, pp 9-12

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air.

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USSR

UDC 620.17:669-1-13:669.15'74-194

CHERNYAK, S. S., IVAKIN, V. L., and MARMONTOV, Ye. A., Irkutsk Heavy
Machine Building Plant

"Properties of 110G13L Steel After Hot Deformation"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 9, 1970, pp
59-60

Abstract: A study was made of the influence of hot deformation on the mechanical properties of type 110G13L low-phosphorus steel, with the following composition: 1.2% C, 10.5% Mn, 0.37% Si, 0.01% S, 0.012% P, produced in a 3 ton basic electric furnace. Specimens were heated from 900 to 1250°C at intervals of 50°C, held for 20-30 minutes, clamped in a press at 0.06 m/min to from 5 to 50% deformation, with subsequent cooling in water. Thirty percent deformation at 1200°C was found to increase strength by 43%, and the yield point by 30% in comparison with the same steel after standard hardening. The plastic properties changed little. The wear of 110G13L steel containing 0.02% P after 30% hot deformation is one-third the wear of type G13L steel containing 0.07% P after standard hardening.

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UDC 616-036.882-08:616.12-78]-092.9-07:616-008.9-074

POGOSOVA, A. V., KOROTKINA, R. N., and ~~CHERNYAK, V. A.~~, Biochemistry Laboratory, and Center of Experimental Research, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR

"Metabolism of Dogs Revived by Extracorporeal Circulation"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5, Sep/Oct 70, pp 28-31

Abstract: Dogs were revived after heartbeat had stopped for 5 and 17 min. by two types of extracorporeal circulation (circulation of donor blood and coronary carotid perfusion). Various metabolic indices were monitored, including electrolyte (K and Na) content, sugar, lactic and pyruvic acid, and SH group content. In the state of clinical death, the K and Na concentrations were practically unchanged, the lactic acid content was substantially increased and the pyruvic acid and sugar levels were somewhat elevated. Lactate dehydrogenase activity and SH group content dropped sharply. With coronary-carotid perfusion, the lactic acid and pyruvic acid concentrations in the blood rose 30 min after perfusion had been started. Lactate dehydrogenase activity and SH group content were somewhat elevated. After 1 hour, when the animals were switched over to their own blood circulation, the lactic acid and blood sugar levels dropped slightly but remained

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POGOSOVA, A. V., et al, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5, Sep/Oct '70, pp 28-31

at almost twice the initial levels. The pyroracemic acid level remained practically unchanged. Lactate dehydrogenase activity dropped and remained below that measured during clinical death. All indices monitored returned to normal within 24 hours after clinical death. After 30 min resuscitation by donor blood perfusion, the lactic acid level was relatively high (but lower than had been noted in animals revived by coronary-carotid perfusion). The SH group concentration varied only slightly. The pyroracemic acid content was slightly above that of the controls but considerably lower than the corresponding levels found in the other group of test animals. After 1 hour the pyroracemic and lactic acid contents, although still shifting toward normal, were 60% above the starting value. The sugar content remained unchanged. It was concluded that there is a breakdown in the oxidation processes, as indicated by the enhanced lactic and pyroracemic acid levels of the blood. The sharp drop in SH groups indicates that during clinical death there is a change in the tertiary structure of albumin.

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Acc. Nr: **AP0052068**

Ref. Code: **UR0396**

PRIMARY SOURCE: Patologicheskaya Fiziologiya i
Eksperimental'naya Terapiya, 1970, Vol 14,
Nr 1, pp 12-17

ELECTRIC ACTIVITY OF THE BRAIN IN REVIVAL BY THE METHOD OF ARTIFICIAL CIRCULATION AFTER PROLONGED PERIODS OF ARREST OF THE HEART

V. F. Portnoy, S. I. Plekhotkina, V. A. Chernyak

Chronic experiments were performed on dogs which sustained prolonged clinical death (from 5 to 12 minutes) caused by desanguination. Electric activity of the brain was studied the first 6 to 8 hours from the commencement of revival, and at the remote periods (in 1-3 days, 1, 2, and 9 months). The dogs were revived with the aid of extracorporeal circulation. In the series with general perfusion the first signs of electrical activity appeared 29.1 ± 2.8 minutes from the beginning of perfusion, and its changed to continuous in 16.2 ± 3.5 minutes. In the series with coronaro-carotid perfusion with subsequent donor circulation the electrical activity appeared in 27.3 ± 1.8 minutes. Its formation into continuous was very rapid, taking 2.6-1.9 minutes on the average. In the majority of experiments EEG was immediately continuous. A frequent rhythm of alpha- and beta-range alternating with the waves of theta- and delta-range dominated in 6 to 8 hours from the commencement of the revival. EEG recorded in dogs 2 to 9 months after the revival failed to differ from the initial, and the animals' behaviour was normal.

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UDC 616.12-008.315-08:616.12-787-07:616.831-073.97

PORTNOY, V. F., PLEKHOTKINA, S. I., and CHERNYAK, V. A., Laboratory of Artificial Circulation and Experimental Surgery, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR

"Electrical Activity of the Brain After Resuscitation by Extracorporeal Circulation Following Prolonged Cardiac Arrest"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1970, pp 12-17

Abstract: The bioelectrical activity of the brain was studied in dogs resuscitated by extracorporeal circulation after 5-12 min of cardiac arrest. In a series of experiments with general perfusion, the first signs of electrical activity appeared after 20.1 ± 2.8 min, in the form of low-amplitude slow waves, that gradually became continuous with increasing amplitude and frequency. Within 4-6 hr from the start of resuscitation, the slow theta and delta waves were dominant on the EEG. In another series of experiments with coronary-carotid perfusion, electrical activity appeared after 27.3 ± 1.8 min, becoming continuous within 1.9-2.6 min. Within 6-8 hours the alpha and beta waves were alternating with the theta and delta waves.

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PORTNOY, V. F., et al., Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1970, pp 12-17

According to EEG studies 2-9 months later, bioelectrical activity was the same as before the experiment. The animals' behavior was also normal.

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UDC 622.241.8

SHCHERBAN', A. N., FURMAN, N. I., BELOGOLOVIN, N. S., CHERNYAK, V. P.

"Depth Relay-Telemetering Thermometer-Thermosonde"

Teplofiz. i teplotekhnika. Resp. mezhved. sb. (Thermophysics and Power Engineering-republic interdepartmental collection of works), 1970, vyp 17
(from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8, Aug 70, Abstract
No 8.32.588)

Translation: The schematic of a telemetering thermometer-thermosonde in the form of linear thermistor, bridged by tunnel diode, is considered. Two-wire cable link of reduced reliability ensures simultaneous power supply from the surface of the thermometer-thermosonde or thermometer-thermosonde, placed at specific intervals in the well, and selective reading from the surface of information using an automatic readout device. The readout of the measured temperature from the surface is relayed (by means of non-contact relay-trigger) in the process of fusion automatic search of the power supply of thermosonde for the given relay point of its volt-ampere characteristic which equals the calibrated current of given temperature scale of secondary instrument. The

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SHCHERBAN', A. N., et al., Teplofiz. i teplotekhnika, Resp. mezhved. sb., 1970, vyp 17

depth telemetering thermometer as compared with known prototypes possesses much higher portability, increased reliability, low threshold of sensitivity and invariance of readings with the change in parameters of the two-wire cable link of the telemetering thermometer-thermosonde with the surface.

Resume

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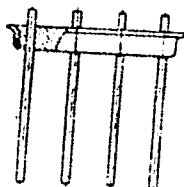
UDC: 621.3.049.75

LEPILIN, V. A., CHERNYAK, V. S.

"A Method of Mounting an Integrated Circuit in a Chassis Base"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 4, Feb 71, Author's Certificate No 292256, Division H, filed 17 Jun 68,
published 6 Jan 71, p 153

Translation: This Author's Certificate introduces a method of mounting an integrated circuit in a chassis base having holes with contact platforms for passage of leads. Installation is done by dipping in molten solder. As a distinguishing feature of the patent, the productivity of the proposed method is increased and the reliability of electrical contact is improved by tinning the above mentioned contact platforms with molten solder and bringing the heated leads through the molten solder film.



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